Before the

FEDERAL COMMUNICATIONS COMMISSION
Washington, DC. 20554

In the Matter of		
	)	
	)	
Field Repair Requirements	)	**RM-10412**
for Commercially-built	)	
Transmitter and Transceiver	)	
Equipment for the Amateur	)	
Radio Service	)	
	)	

To: The Commission

Reply Comments by Nickolaus E. Leggett
N3NL Amateur Radio Operator

The following is a set of Reply Comments from Nickolaus E. Leggett, an amateur extra class radio operator, independent inventor, and a certified electronics technician. These replies are directed at selected comments that have been submitted in RM-10412.

In each topic area, I quote the submitted comment on RM-10412 followed by a response to the comment.

Should Amateur Radio Operators Have Electronics Knowledge?

Some commentators have stated on the record that amateur radio operators do not need electronics knowledge. For example, Mr. Christopher J. Cieslak states: "As for the advancement of the radio art, this proposal is completely without merit. A computer owner does not have to know how a hard drive works to plug one into his PC, and an amateur radio operator would not need to know the nuances of a direct digital synthesis VFO in order to plug such a module in his radio." Mr. Carl Swanson states: "Mr. Leggett has to remember that not all licensees are technically schooled. Many licensees enjoy the art of

communication in itself, & either don't understand or cannot be bothered with "how" the radio works, just that it "does"".

This view of amateur radio is probably still a minority view. Most of us enthusiastically joined amateur radio because it had a strong technology component.

The technological component of amateur radio, including self-training and contributing to the radio state of the art undoubtedly helps amateur radio in the international frequency allocation process. We should not dismiss technological self-training and invention which helps amateur radio continue to earn its frequency allocations. The comment by Mr. Thomas A. Geis goes against this amateur radio resource: "I oppose this petition as it is an unreasonable burden on manufacturers and would encourage tinkering with the designs of modern and complex equipment without proper (factory) training. If an amateur chooses to use commercial equipment, he should be bound by the maker's guarantees, etc. regarding "repairs"". Is Mr. Geis suggesting that self-training by means of repair and modifications of one's own equipment <u>should</u> be discouraged by corporate action? This would certainly be shocking to the founding fathers of amateur radio. They were generally enthusiastic tinkerers. The Commission should prevent corporate policies from getting in the way of amateur radio self-training and experimentation in electronics. The Commission can accomplish this by establishing a set of field repair standards for amateur radio equipment.

Are Commercially-built Amateur Radios Field Repairable?

Some of the commentators have stated that the current commercially-built amateur radios are not field repairable. Mr. Frank A. Lynch, W4FAL, states: "The typical hand held amateur transceiver or mobile rig is no longer serviceable by the average ham who doesn't

have expensive soldering, desoldering, test, and a binocular microscope!" Mr. Robin Rumbolt states: "I am sure that Mr. Leggett means well in his proposal, but the fact is that most amateurs, indeed many engineers, would be incapable of field repairs of today's equipment."

The Commission should ask how amateur radio operators are supposed to learn about electronics from such equipment?

Mr. Carl R. Stevenson, WK3C, states that: "...I, and many other amateurs, routinely diagnose, repair, and even build new equipment of our own designs, employing modern SMT components, including integrated circuits, using only simple and inexpensive techniques and tools." This statement clearly disagrees with the other statements quoted above. The Commission should explore this issue in more detail in a Notice of Proposed Rulemaking where additional expert commentary and evidence can be accumulated for the record. Perhaps the American Radio Relay League will submit commentary on this subject as well.

My own observation is that most amateur radio operators think that modern commercially-built amateur radio equipment is very difficult to service.

Is Field Repair Actually Useful for Emergency Situations?

Some commentators have stated that field repair is not useful in an emergency situation. For example, Mr. Carl R. Stevenson states: "Proper emergency preparedness planning includes, ***of necessity***, the availability of ***spare equipment***. Field repairs of radios at the component or even module level are the ***last*** thing any sensible emergency planner would want to deal with in the midst of emergency or disaster communications efforts."

This depends on the emergency. Some emergencies, such as tornadoes, are best met by having spare radios on hand. Other emergencies, such as an electromagnetic pulse (EMP)

attack, would make heavy demands on field repair due to the comprehensive scope of the emergency (Refer to RM-10330). In addition, emergencies in remote locations such as vessels at sea or campers in the mountains can definitely be aided by having some capacity for field repair.

Light-emitting Diodes for Bus Signals

Mr. Carl R. Stevenson had especially critical comments on this subject: "Finally, Mr. Leggett's suggestion that a requirement be enacted for *"Light-emitting diode displays of bus signals on digital systems"* is, perhaps, the most absurd and impractical of all of his proposals. First, many modern systems have numerous internal digital busses. The cost, physical space, current consumption, and potential performance degradation associated with providing LED displays to display the state of each signal in each bus would be prohibitive. Additionally, such displays would, in virtually all cases, be ***totally useless*** because the human eye could not possibly follow the changes that would exist on the address and data busses of even the slowest of digital systems."

Mr. Stevenson overlooks the fact that many microprocessor-based systems can be single-stepped through their cycles at a very slow and observable rate. In addition, the lack of illumination of an LED at normal cycle rates can indicate a fault related to that bus conductor.

Turning the Clock Back?

Several comments complained that my petition would turn the clock back to more primitive radio systems. Mr. Carl Swanson states: "Does Mr. Leggett also propose that the government also "wind the clock back" for the automobile industry so that cars are once again as field repairable as they were in the 60's and 70's?".

In regard to this, it is interesting to note that there is a bill before Congress addressing the field repair of automobiles. This bill is the **Motor Vehicle Owners' Right to Repair Act of 2001, H.R. 2735**. This bill addresses the availability of information for automobile repair. A copy of this bill is listed in Appendix A of this document.

In addition, there is no reason that a field repairable radio has to be old fashioned. Our amateur radio operators and engineers have sufficient inventive capability to design new radios that are both field-repairable and fully modern in operation. High technology does not have to equate with a closed design architecture.

Should Corporations be Regulated?

It seems likely that much of the stated opposition to RM-10412 is due to the popular political philosophy that the regulation of corporate behavior should be avoided. It is clear that this philosophy is very popular, especially in amateur radio circles. However, the Commission should retain open minds to the idea that corporate behavior can be negatively impacting the basis and purpose of amateur radio.

The Aftermarket and Field Repair

Having field-repairable radios would assist the aftermarket in independent radio repair as well as the retail market in radio components. Perhaps the FCC should team up with the Federal Trade Commission (FTC) in determining if the current design of amateur radios is resulting in a restraint of trade that should be regulated.

Nickolaus E. Leggett
N3NL Amateur Radio Operator
1432 Northgate Square, Apt. 2A
Reston, VA 20190-3748
(703) 709-0752
nleggett@earthlink.net

April 22, 2002

Service copies of these reply comments have been sent by U.S. Postal Service First Class Mail to the following persons:

Mr. Christopher J. Cieslak
810 North 16 Avenue
Melrose Park, IL 60160-3829

Mr. Thomas A. Geis
One Ponemah Road
Amherst, NH 03031-3003

Mr. Frank A. Lynch, W4FAL
2528 Oakes Plantation Drive
Raleigh, NC 27610-9328

Mr. Robin Rumbolt
1202 Wilkinson Road
Knoxville, TN 37923-2000

Mr. Carl R. Stevenson, WK3C
4991 Shimerville Road
Emmaus, PA 18049

Mr. Carl Swanson
1342 E. Hillcrest Drive, #21
Thousand Oaks, CA 91362-2563

APPENDIX A

Motor Vehicle Owners' Right to Repair Act of 2001 (Introduced in the House)
HR 2735 IH

107th CONGRESS
1st Session
H. R. 2735

To protect the rights of American consumers to diagnose, service, and repair motor vehicles purchased in the United States, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

August 2, 2001

Mr. BARTON of Texas (for himself, Mr. TOWNS, Mr. BRYANT, Mr. BLUNT, and Mr. CONDIT) introduced the following bill; which was referred to the Committee on Energy and Commerce

---

A BILL

To protect the rights of American consumers to diagnose, service, and repair motor vehicles purchased in the United States, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the `Motor Vehicle Owners' Right to Repair Act of 2001'.

SEC. 2. FINDINGS AND PURPOSES.

(a) FINDINGS- The Congress finds the following:

(1) The ability to diagnose, service, and repair a motor vehicle in a timely, reliable, and affordable manner is essential to the safety and well-being of automotive consumers in the United States.

(2) Consumers are entitled to choose among competing repair facilities for the convenient, reliable, and affordable repair of their motor vehicles.

(3) Increased competition among repair facilities will benefit vehicle owners in the United States.

(4) Computers of various kinds are increasingly being used in motor vehicle systems, such as pollution control, transmission, antilock brakes, electronic and mechanical systems, heating and air-conditioning, sound, and steering.

(5) The diagnosis, service, and repair of these vehicle systems are essential to the safety and proper operation of modern motor vehicles.

(6) In many instances, access codes prevent owners from making, or having made, the necessary diagnosis, service, and repair of their motor vehicles in a timely, convenient, reliable, and affordable manner.

(7) Consumers in the United States have benefited from the availability of an aftermarket parts supply, or parts and accessories used in the repair, maintenance, or enhancement of a motor vehicle. The American economy has also benefited from the availability of an aftermarket parts supply that provides jobs to over 5 million workers in 495,000 businesses, and generates $200 billion in annual sales.

(8) Vehicle owners in the United States should have the right--

(A) to all information necessary to allow the diagnosis, service, and repair of their vehicles;

(B) to choose between original parts and aftermarket parts when repairing their motor vehicles; and

(C) to make, or have made, repairs necessary to keep their vehicles in reasonably good and serviceable condition during the expected vehicle life.

(9) The restriction of vehicle repair information limits who can repair motor vehicles and what parts may be used to repair those vehicles, which limits consumer choice and thus limits competition.

(10) The Congress has provided the Federal Trade Commission with broad authority to make and enforce rules to foster competition, to prevent unfair methods of competition in commerce, and to protect consumers.

(b) PURPOSES- The purposes of this Act are the following:

(1) To require the Federal Trade Commission to prescribe and enforce rules necessary to ensure the right of a motor vehicle owner to obtain all information required for the diagnosis, service, and repair of the motor vehicle.

(2) To ensure the safety of all vehicle owners by requiring disclosure of all information necessary for the proper diagnosis, service, and repair of a vehicle in a timely, affordable, and reliable manner.

(3) To encourage competition in the diagnosis, service, and repair of motor vehicles.

SEC. 3. MANUFACTURER DISCLOSURE REQUIREMENTS.

(a) DUTY TO DISCLOSE- In accordance with rules prescribed by the Federal Trade Commission under section 7, the manufacturer of a motor vehicle sold or introduced into commerce in the United States shall promptly provide to the vehicle owner, to a repair facility of the vehicle, and to the Commission for use by any such vehicle owner or repair facility, the information necessary to diagnose, service, or repair the vehicle. Such information shall include--

(1) information necessary to integrate replacement equipment into the vehicle; and

(2) other information of any kind used to diagnose, service, repair, activate, certify, or install any motor vehicle equipment (including replacement equipment) in a motor vehicle.

(b) PROTECTION OF TRADE SECRETS-

(1) DETERMINATION BY FEDERAL TRADE COMMISSION- The Federal Trade Commission may not require a manufacturer to publicly disclose information that, if made public, would divulge methods or processes entitled to protection as trade secrets of that manufacturer, but may require disclosure of such information to the Commission for the purpose of determining whether such information is entitled to such protection. Such determination shall be made on the record after an opportunity for an agency hearing.

(2) PREVIOUSLY DISCLOSED INFORMATION- No such information may be withheld by a manufacturer if that information is provided (directly or indirectly) to franchised dealers or other repair facilities.

SEC. 4. UNFAIR OR DECEPTIVE ACT OR PRACTICE.

The failure by a manufacturer to provide the information required by section 3(a) constitutes an unfair method of competition and an unfair or deceptive act or practice in or affecting commerce (within the meaning of section 5(a)(1) of the Federal Trade Commission Act (15 U.S.C. 45(a)(1))). Violation of a rule prescribed under section 6(a) constitutes violation of a rule defining an unfair or deceptive act or practice prescribed

under section 18(a)(1)(B) of the Federal Trade Commission Act (15 U.S.C. 57a(a)(1)(B)).

SEC. 5. PRIVATE RIGHT OF ACTION.

A vehicle owner or repair facility may bring a civil action to enjoin a violation of this Act and to recover the costs of litigation (including reasonable attorney and expert witness fees). Such an action may be brought in the district court of the United States for the district in which such owner resides or such repair facility does business, without regard to the amount in controversy or the citizenship of the parties.

SEC. 6. RULEMAKING.

(a) IN GENERAL- Not later than 180 days after the date of enactment of this Act, the Federal Trade Commission shall prescribe rules setting forth a uniform method by which a manufacturer shall provide the information required by section 3(a), including disclosure in writing, on the Internet, or in any other manner, or under such terms, as the Commission determines may be appropriate. Such rules shall take effect for vehicles manufactured after model year 1994.

(b) LIMITATION- The Federal Trade Commission may not prescribe rules that--

(1) interfere with the authority of the Administrator of the Environmental Protection Agency under section 202(m) of the Clean Air Act (42 U.S.C. 7521(m)) with regard to motor vehicle emissions control diagnostics systems; or

(2) conflict with rules prescribed by such Administrator under such section.

SEC. 7. DEFINITIONS.

In this Act:

(1) The term `commerce' has the meaning given that term in section 4 of the Federal Trade Commission Act (15 U.S.C. 44).

(2) The terms `manufacturer', `motor vehicle', and `motor vehicle equipment' have the meanings given those terms in section 30102(a) of title 49, United States Code.

(3) The term `vehicle owner' means any person who owns, leases, or otherwise has the legal right to use and possess a motor vehicle, or the agent of such person.

(4) The term `repair facility' means a person engaged in the repair, diagnosing, or servicing of motor vehicles or motor vehicle engines.

(5) The term `replacement equipment' has the meaning given that term in section 30102(b)(1) of title 49, United States Code.

(6) The term `model year' has the meaning give that term in section 32901(a) of title 49, United States Code.